

Appl. No. 10/524,398
Amdt. Dated October 8, 2008
Reply to Office Action of September 4, 2008

REMARKS/ARGUMENTS

A Request for Continued Examination has been included with this response. Accordingly, Applicants request the withdrawal of the finality of the last Office Action and request further consideration of the attached amended and new claims on the merits.

New claims 20 - 27 have been added in order to alternately define the invention as disclosed in the specification.

In regard to the Examiner's objection to claim 16, Applicants submit that the objection has been cured by the instant amendments. Accordingly, Applicants respectfully request that the objection be withdrawn, and claim 16 placed in condition for allowance.

Applicants respectfully request reconsideration of the Examiner's rejection of claims 1, 12, 13, and 16 under 35 U.S.C. §102(e). The Examiner has rejected these claims in view of the cited reference of *Eguchi et al.* (U.S. Patent Pub. No. 2004/0036723).

Applicants note that the Court of Appeals for the Federal Circuit has held that "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

Applicants submit that the *Eguchi* reference fails to anticipate each and every element of the currently amended claims.

As noted in the specification at page 6, with reference to Figure 31 in the first full paragraph, the ink ejecting apparatus may include a unit head with an ejecting direction that is different from those of the other heads incorporated into the device such that the ejecting direction of ink droplets generally ejected from the liquid ejection part of the Nth head is inclined to the (N-1)th head. This may be due to the fact that the ejection characteristics such as the general ejecting directions vary for each of the unit heads due to errors in

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manufacturing or assembly, for example.

As noted in the specification, in this case, even when every head is improved in its overall accuracy, dots may nonetheless be arranged in the same way as those illustrated in Figure 30 so that a conspicuous stripe may be undesirably produced in the boundary region between the unit heads.

As noted in the specification beginning on page 7, the prior art techniques for solving this problem suffered from numerous deficiencies and therefore there remained a need for overcoming the problems associated with differing characteristics for the various unit head elements. It is only Applicants' instant disclosure that provides the unique and non-obvious solution for overcoming these substantial deficiencies.

In accordance with the present invention, actual ink ejection characteristics for each unit head element are determined via a test pattern and optical scanning of the resultant pattern. If the printed pattern varies sufficiently from predetermined or nominal characteristics for the ink ejecting head unit elements, an auxiliary control is invoked to alter the ink ejection characteristics for all of the ink ejection elements of a given unit head. This change is stored and made permanent for all future printing operations, or at least until another test pattern and measurement process is invoked. For example, as shown in Fig. 9, due to a manufacturing defect in unit head 11(N), the ink for all the ink nozzles is dispersed shiftedly to the left. However, after running a test pattern and determining that the shift is over a predetermined acceptable amount, auxiliary control is implemented in head chip 11(N) to redefine the default ejection control drive signals to require deflection of the ink ejection slightly shifted to the right. This change is then stored in the printing apparatus to be used in all future print operations as a default deflection signal, or at least until a subsequent test pattern and measurement process is effectuated.

The prior art cited by the Examiner provides no teaching or suggestion whatsoever

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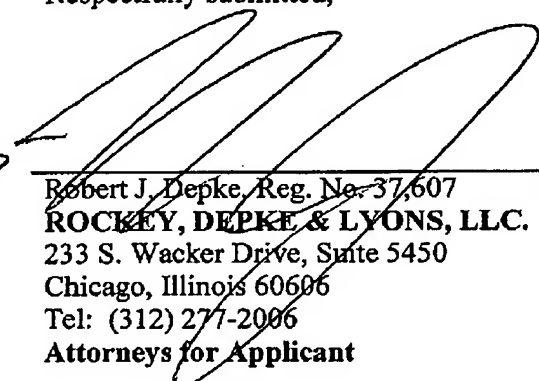
regarding this advance in the art. At best, the prior art merely describes altering individual ink ejecting elements. In contrast, in accordance with the present invention, the macro characteristics associated with each of a plurality of unit heads are determined and based on comparison with the nominal or desired primary ejecting characteristics, this system may determine that invoking the auxiliary control is preferable in order to overcome the recognized deficiencies in image generation resulting from unit head elements that have overall characteristics that are at odds with a desired operating condition for each unit head, and further stores the result to be utilized as a default ejecting position for future ejections.

The Examiner's remaining references cited but not relied upon, considered either alone or in combination, also fail to teach applicant's currently claimed invention. In light of the foregoing, Applicants respectfully submit that all claims now stand in condition for allowance.

In the event that it is deemed necessary, the Commissioner is hereby authorized to charge any fees due or to credit any overpayment to Deposit Account No. 50-3891.

Respectfully submitted,

Date: 10/16/08


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